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1. Introduction

Disasters have been global common issues and regular problems to many places all over the world. It seems that there is no single place secured from disasters, not even the places where historically have not experienced any event of disaster. For some places like those are located on the Ring of Fire belt (the country like Japan,

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Taiwan, Vietnam and Indonesia, for example), the disaster risk have become common and the people living in the areas are familiar with the hazard. Although the people have been having some degree of adaptation to disasters, there are many evidences that the number of people victimized by the disaster tends to increase over the time. There are bunch of evidences that people who live in coastal cities and regions are more vulnerable to disaster risk.

The level of vulnerability is increasing recently due the sea level rise as the impact of climate change. The countries which have a great number of coastal areas like Indonesia are really in the huge risk. In the case of Indonesia, the problems could be even more complex as the majority of big urban settlements are located in coastal areas, especially in Java Island which is the main center of national activities. Among the larger cities in coastal area of Java Island, Semarang is considered unique due to its physical characteristics. Despite its location on coastal areas, the city of Semarang is enriched with sloppy urban morphology in southern part of the city with some areas have a very steep slope. With this natural condition, the city has been long experiencing with potential multi-hazards risks. As the consequences, tidal floods, landslides, and land subsidences have made the city as regular disaster-prone areas. However, disaster events in Semarang are not only from natural factors. Rapid urbanization in the last two decades has created dense urban built environment which in some areas tend to be poor in terms of sanitation. This kind of urban habitat has been the cause of increasing number of dengue fever in the city. Based on statistical data, Semarang is the most dengue infected city as it records the highest dengue fever incidents in the last decade.

There are also an increasing number of fire incidents in the city, especially in the central part of the city where the building density is very high. Therefore, along with natural disaster risk, the city also has potential hazards that come from human activities. Although the risks of disasters are obvious, Semarang like other cities in Indonesia seems to be unprepared to reducing disaster risk, especially when it is related to the issue of governance. It is just recently that the city government established "Kelurahan Tanggap Bencana" (community disaster preparedness group), even though the needs to have such organizations have been advised widely (Suara Merdeka, 3 October 2014). When the last flooding hit the city in late 2014, there are some confusions among those involved in the disaster responses as there were overlapping and uncoordinated tasks between local government agencies. The study is aimed to assess the current capacity of disaster governance in the city. It is argued that well-structured governance is still key issue in the city. The rapid growth of urbanization in Semarang and its neighboring regions will increase the challenges for the government and other stakeholders to deal with the even greater risk of disaster. Therefore, the challenges are not only from within, but also related to the external factors. Having said that, the study will also elaborate the opportunities to develop more sound disaster governance which involves internal as well as external stakeholders. This article is divided into five sections. An introductory part starts the discussion by explaining the rationale behind the study. The second section discusses the theoretical framework and perspective used in the study. The following section describes the methods applied in the study. Research findings and discussion are elaborated in the fourth section. A brief summary and conclusions conclude this article.

2. Theoretical Framework

Aside from technical aspects related to disaster risk reduction, governance is widely advocated as one of key important factors to reduce risk of disasters (Gall et al., 2014). In its original meaning, governance can be described as the process in which there are communication, sharing, and coordination among stakeholders in the decision making process (UNDP, 1997). In the context of disaster risk reduction, as Tierney (2012, 344) points out, "disaster governance consists of the interrelated sets of norms, organizational and institutional actors, and practices (spanning pre-disaster, trans-disaster, and post-disaster periods) that are designed to reduce the impacts and losses associated with disasters arising from natural and technological agents and from intentional acts of terrorism." This definition implies that disaster governance covers not only organizational level, but also the whole system (UNDP, 2007).

As other governance model, disaster governance also has comprehensive and integrated character. These characteristics involve participation of all parties involved in the management of disaster. The involvement of stakeholder participation is essential part of disaster governance (IPCC 2012; UNISDR 2005; UNISDR 2011). The second factor is cooperation and collaboration among parties regardless their position. Cooperation and collaboration should across scale and put away all barriers that may exist (Gall, 2014). The last element of disaster

governance is flexibility. Because disasters are almost impossible to predict, the way disasters are managed should have greater flexibility so that it can follow the nature of unpredictability imposed by disasters (Gall, 2014).

The effectiveness of disaster governance can be assessed from different perspectives. Ahrens and Rudolph (2006) mentions the importance of transparency and accountability. These factors can be only measured if there are good mechanism in monitoring and evaluation of disaster policy and implementation. Prizzia (2008) elaborates two factors that can determine the success of disaster governance, namely coordination and collaboration. According to Prizzia (2008: 76) "coordination and collaboration in disaster management among public and private sector agencies and organizations at the community, city, local, state, national, and even international levels have become increasingly urgent".

While the effectiveness of a disaster governance mostly considers the strength of institutional dimension in disaster management, there are evidences from many places that knowledge gap among stakeholders is of importance. Equal knowledge among stakeholders is one of the key factors that influence the effectiveness. With regard to having a common platform of knowledge among stakeholders, Gall (2014) suggests that there is a need to understanding the entire inter-organization and intergovernmental network. From the above theoretical perspectives, it can be summarized that there are three important elements in effective disaster governance. First element relates to the availability of integrated framework so that the efforts to minimize the risk of disaster can refer to. The second element is coordination among stakeholders. This can be done by communication and cooperation both inter-government institution and among stakeholders. The last element is the understanding to the importance of disaster risk. This element underline the importance of knowledge sharing among stakeholders as there is always knowledge gap in practical level.

3. Methods

This research adopts capacity development framework developed by UNDP (2009) as the basis for analysis. There are two analyses in this research. The first analysis addresses the gap between what is regulated as the normative basis for disaster management and the factual condition in the case city, i.e. Semarang. The second analysis focuses on the experiences of stakeholders in managing disaster. In second part of the analysis, further assessment is done to understand the level of participation of every stakeholder in the governance of disaster.

The research uses questionnaire as the main field instrument. Respondents are selected from various stakeholders who have involved in activities related to reducing and mitigating disaster risk in the city of Semarang. Scoring system is applied with the questionnaires to measure the variables. The score ranges from 0 (zero) to 10 (ten) that indicates the highest value of the variables. In addition of the survey, the research has also conducted some interview to key resource persons that represent respective stakeholder.

4. Results and Discussion

As mentioned in previous section, the research is based on gap analysis comparing the current stakeholder capacity with a benchmark as reference point. The study uses the Indonesian Disaster Act which has been used widely in the country for almost ten years as the benchmark. The law and its lower-order regulations have provided normative guidance for disaster management in Indonesia.

Based on questionnaires compiled from field surveys, the findings of the research are categorized into two important aspects. The first aspect describes the current multi-stakeholder experiences and their likely future achievement. The gap analysis applies disaster management cycle as shown in Figure 1. The second part of the analysis evaluates the level of participation among stakeholders who involve in multi-hazard disaster management in the city (Figure 2).

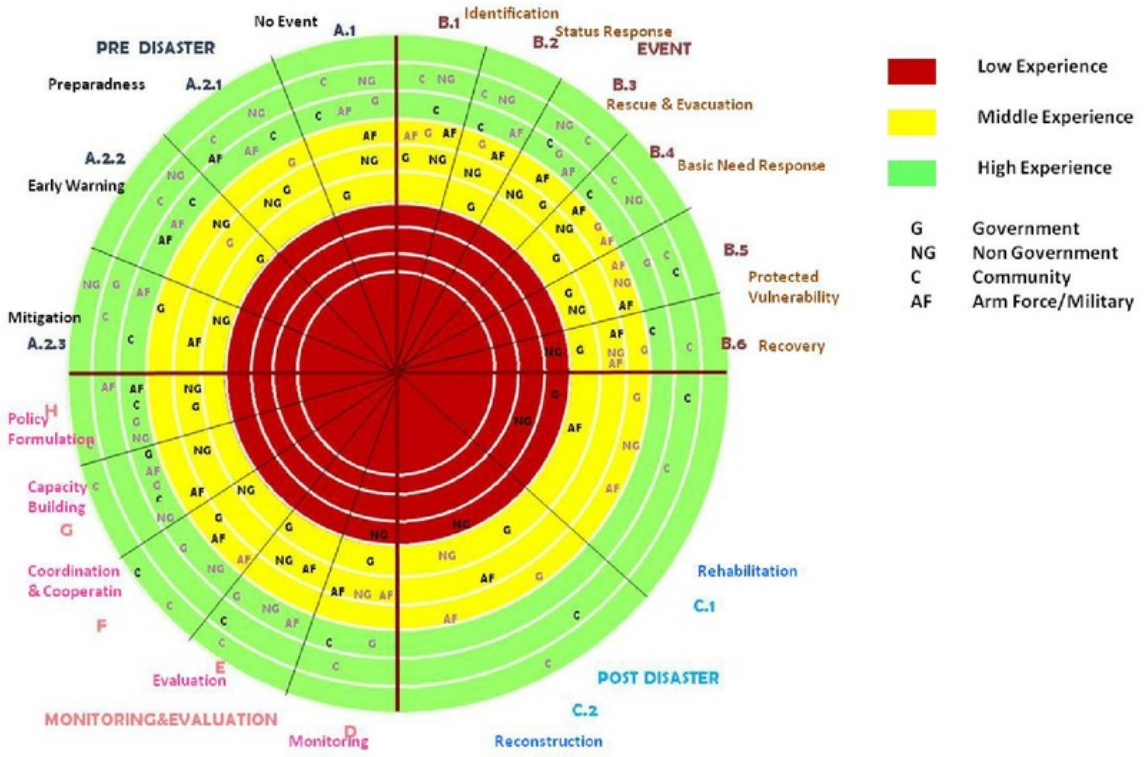

Fig. 1. Gap analysis of existing disaster capacity of Semarang

Figure 1 shows the range of stakeholders' activities on every phase of disaster cycle. Circle of scores 0-10 indicates the level of experience (including skill and knowledge). The level of experience is classified by using colors. Red color indicates low experience, yellow is for middle experience and green represents high experience. Disaster cycle is divided into four quadrants, which every quadrant describes every phase namely 'PRE DISASTER' (A.1-No Event, A2 Potential Event consist of Preparedness, Early Warning and Mitigation), 'EVENT' (B1-Identification, B2-Status Response, B3-Rescue & Evacuation, B4- Basic Need Response, B5-Protected Vulnerability), 'POST DISASTER' (C1-Rehabilitation, C2-Reconstruction) and 'MONITORING EVALUATION' (D-Monitoring, E-Evaluation, F-Coordination & Cooperation, G-Capacity Building, H-Policy Formulation).

As shown on Figure 1, it is found that most of stakeholders have great number of experiences on the event phase. In this regards, the highest score belongs to the community and is followed by Military Forces on the second place. The institution has a lot of experience particularly on phase of Pre Disaster and Event. Unfortunately, on the same phase, Municipal Government and Non-Government respectively has the lowest score.

Post Disaster Event has the average lowest score compare to the other events. The lowest score belongs to Non-Government, then is followed by government and the Army. In this aspect, on the contrary, community has the highest score. Unique distribution score emerges on the Monitoring and Evaluation Phase, which is varies from top score (that belongs to community) to the bottom score (belongs to non-government). From this, it can be indicated that most of multi-stakeholders do not take the post disaster event as much as others. In earlier discussion as mentioned above, it is quite obvious that community has the highest score on almost every aspect of disaster cycle. Figure 2 addresses who are the real actors that contribute or participate on multi hazard disaster management activities. As shown on the figure, community seems to more focus their contribution on flood and dengue fever.

Based on in-depth interview, it is known that disaster preparedness groups (KSBs) on flood and dengue fevers take on the responsibilities, actuation and control their grass-root activities. Social learning has been developed by disaster preparedness groups on flood through sharing skill and knowledge on informal meeting, workshop, focus group discussion and participatory disaster risk assessment and mapping. In addition to these, they have also involved in training and simulation related to team building, early warning, evacuation anticipation, reconstruction and rehabilitation.

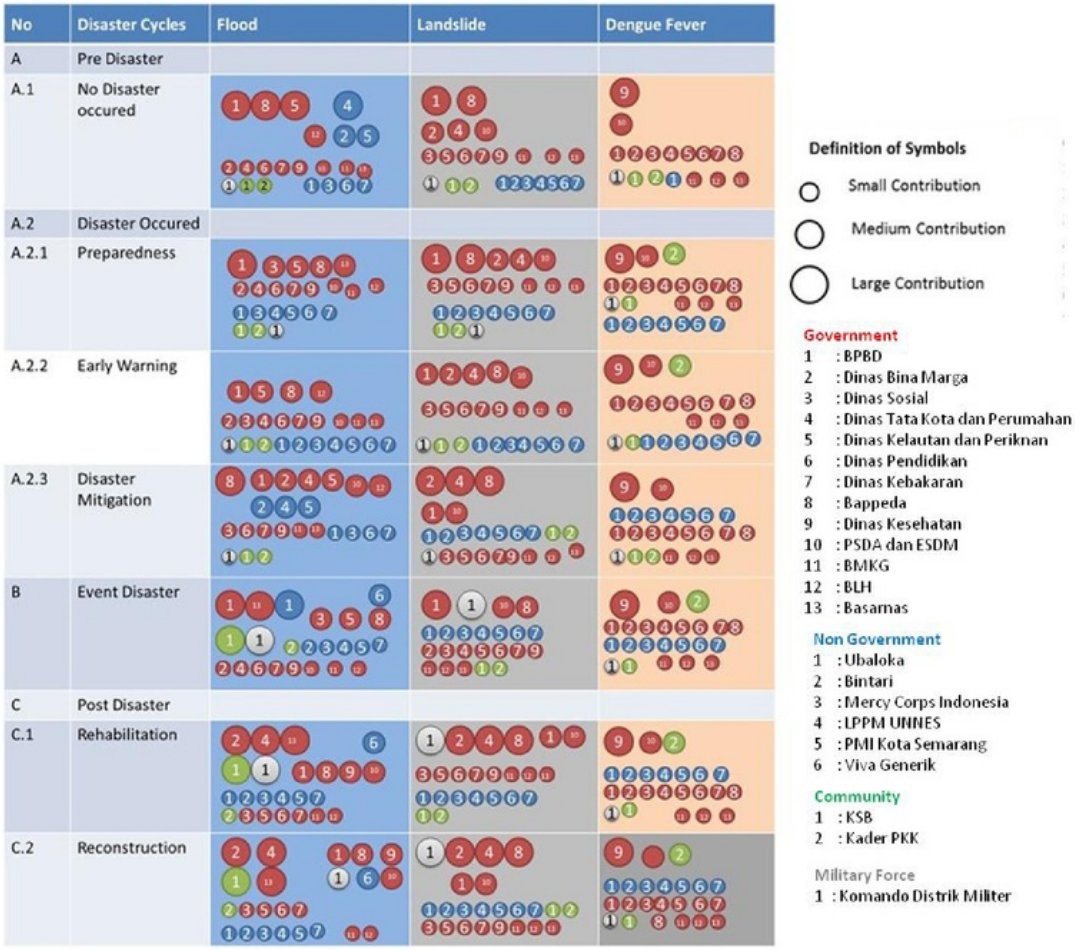

Fig. 2. Contribution of stakeholders in disaster management cycle

PKK, women group at neighborhood level which consists of 30-50 households, does some particular monitoring on inspecting mosquito larva in bathroom and water tank. This activity includes the making of monthly documentation and disseminating their documentation to the neighborhood meeting and submitting the report to their respective sub-district and PUSKESMAS (Center of Community Health Services). Awareness to ensure the cleanness of water resource has also been increasing. This is so because there is culture among community that people especially women feel embarrassed if not behaving a clean and healthy lifestyle. According to Semarang Health Agency, every household is expected to behave Clean and Health Lifestyle for reducing incident rate of dengue fever by applying 3M+. This term is used to indicate some activities namely cleaning water tank weekly,

covering water tank, recycling used household equipment and protecting them from mosquito attack. Ideally Score of Household with Free Mosquito Larvae should be 90-95% high, but the existing score is only 70-80% on average.

On the contrary, Non-Government stakeholders that consist of NGO, State University, and Private Sector only focus on Pre Disaster Phase. They mostly cover some activities through action research, disaster risk assessment and initiation to develop community awareness and endorse some piloting implementation projects on several sub district as case studies. The score of experience is low because they do not fulfill all of disaster management components as suggested by normative guidelines.

In line with this, municipal government has somewhat been less confidence to take some responsibilities on integrated planning, actuating, organizing and controlling in all disaster management phases. The burden of Semarang multi hazard disaster management activities is relied on BPBD and Health Agency that actually are assigned to take responsibilities only on the event phase. Other institutions that should take the responsibility on planning and mitigation at Pre Disaster Phase have had neither disaster management plan nor SOP (Standard Operational Procedures). It is not surprising because with the absence of documents that describe the city baseline activities on disaster management there will be no guidelines at all in achieving some better outputs, outcomes and impacts as yields of good governance attempts. This condition creates unclear communication and lack of coordination among multi stakeholders. It will not create any feedback from the stakeholders to continuously improve any services needed in the future. By replicating what happened in the grass root community and scaling up to city level, it is obvious that there will be the increased capacity of municipal government and non-government organizations to take some improvement on the governance of disaster risk reduction in the city.

5. Conclusions

From those findings, it can be concluded that community has the highest capacity compared to the other stakeholders in Semarang multi disaster management. It is shown by many activities that fulfill all phases (Phases of Pre Disaster, Event, Post Disaster and Monitoring Evaluation) on the normative items of Disaster Management Act. The community capacities on grass root level are reflected in the successful implementation of Piloting Implementation Program which was initiated by a non-government organization in collaborating with the state universities and related municipal agencies. Their experiences on disaster management are enhanced by the development of the early warning systems. With the systems, community can now be more prepared and resilient by having intensive knowledge sharing within disaster preparedness groups, especially on flood and dengue fever.

Learning from the community best practice, Semarang Municipal Authorities should incorporate good governance on disaster management by creating a participatory SOP as a baseline guideline for implementing basic need services. Moreover, it is also important to note that continuous improvement that is in line with increasing multi-stakeholder experiences, knowledge, achievement and capacity is necessary. To increase multi-stakeholder participation there are some recommendations which is important to be taken into account:

- Fostering multi-stakeholder involvement on strong documentation process so that every step of the process will constantly be updated and practical problem solving is communicated to each other. This documentation will also enhance the evidence-based disaster management activities in all phases.
- Building network among multi-stakeholder on disaster management forum. This will need the accommodation of regular dialogue and formulate policy input as a feedback to the municipal authorities. This is also to encourage better coordination and cooperation among stakeholders. It will also enhance inter-stakeholders relationship.
- Regularly publishing the documentation process on public sphere through newspapers and web blog which is an effective tool for dissemination to wider community.

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